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AIRBUS INDUSTRIE



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DATE: 24-May-00

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DIRECT LINE: 05.61.93.30.28

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Rules Docket (AGC-10)
Federal Aviation Administration
800 Independence Ave, SW
Washington, DC 20591

~~DA# 30005~~
Docket # FAA-3000-
7330-3

Dear Sir or Madam,

Enclosed are 2 copies of a petition for rulemaking to modify recording resolution requirements for certain digital flight data recorder parameters on Airbus airplanes.

If you have any questions on this matter, please do not hesitate to contact us. While I would be pleased to answer any questions you might have, for your convenience, communications on this matter may be handled through

Dr. John K. Lauber
Vice President, Safety
and Technical Affairs Airbus
1909 K St., NW
Washington, DC 20006.

Dr. Lauber may be reached at (202) 331-2239.

Thank you for your assistance.

Sincerely,

Wolfgang DIDSZUHN
Vice President, Product Integrity
Airbus Industrie

OFFICE OF THE
CHIEF COUNSEL
FEDERAL AVIATION
ADMINISTRATION
2000 MAY 30 P 3:51

Submitted to
Federal Aviation Administration

In Re:)	
Petition for Rulemaking to modify)	
)	Docket No.
14 CFR 121 Appendix M and)	
14 CFR 125 Appendix E)	
)	
)	
)	

Submitted by

Wolfgang Didszuhn
Vice President, Product Integrity
Airbus Industrie
Blagnac, France

For further information please contact:

Dr. John K. Lauber
Vice President, Safety and Technical Affairs
Airbus, Washington Office
202-331-2239

May 23, 2000

Summary of the Petition

Airbus Industrie, Blagnac, France, petitions for amendments to 14 CFR 121 Appendix M and 14 CFR 125 Appendix E to permit minor deviations from the specific detailed quantitative recording requirements for flight data recorder information on A318/319/320/321 and A330/A340 Series aircraft. The resolution for several recorded parameters as implemented on these fly-by-wire aircraft differs slightly from the current regulation.

1.0 General

The rulemaking implemented by FAA in August of 1997 (62 FR 38362) substantially improved the requirements for recording of up to 88 parameters of flight data for diagnostic use in the event of an accident or serious incident. In that rulemaking, it was clearly stated that FAA had tailored the rule to avoid major equipment retrofits. The new requirements are to be met in stages, with the first 34 parameters being treated initially (at the next heavy maintenance check after August 18, 1999 but no later than August 20, 2001), followed by parameters 35-57 (for aircraft manufactured after August 18, 2000 upon delivery), and last dealing with parameters 58-88 (for aircraft manufactured after August 19, 2002, upon delivery).

On August 24, 1999 (64 FR 46117), FAA published a final rule which responded to the Airbus petition filed on April 9, 1998, seeking minor changes to the recording resolution requirements for several digital flight data recorder (DFDR) parameters. The changes sought considered only the first 34 parameters, and the rule granted those requests. Unfortunately, the need for modifications to the recording requirements for one of the parameters (parameter 9, EPR actual) had been overlooked by Airbus. This petition requests relief so that correction of that oversight is effected.

Airbus has completed its review of parameters 35-57 to be recorded under the new regulations. For parameters 35-57, small changes are requested for the recording resolution requirements for 3 parameters. In addition, Airbus notes that parameter 88 is not relevant to aircraft where cockpit flight control input force is a direct function of the position of the control input device only (i.e sidesticks on all Airbus fly-by-wire aircrafts, and rudder pedals on A340-500/-600).

1.1 Substance of the rules from which exemption is sought [per FAR 11.25(b)(3)]

The recording requirements for DFDR's are contained in Appendix M of 14 CFR 121, and Appendix E of 14 CFR 125. Specifically, Airbus seeks minor amendments as specified herein to the recording requirements for parameter 9 (Thrust/power of each engine), parameter 37 (Drift Angle), parameter 42 (Throttle/power lever position) and Parameter 57 (Thrust Command).

1.2 Interests of the petitioner [per FAR 11.25(b)(4)]

Airbus Industrie is a manufacturer of transport category aircraft with worldwide customers, including many in the U.S. For that reason, Airbus is required to obtain certification from the FAA for any of its aircraft that are to be operated by its customers in accordance with either Part 121, Part 125 or Part 129 of the Federal Aviation Regulations. The new DFDR requirements present, for the fly-by-wire aircraft operated by a number of US customers, recording requirements that are incompatible with equipment installed and in current production for some of these aircraft. Rather than seek, on behalf of its customers, permanent exemption from these requirements, Airbus petitions herein for regulatory changes that would obviate such exemptions.

2.0 Discussion

The FAA, in promulgating the new DFDR recording resolution requirements did not intend to require equipment retrofits. The changes that are requested would be implemented in order to comply with that aim. For longer lead DFDR equipment to be installed after August 19, 2002, Airbus will ensure compliance with the rule as amended.

Specifically, changes are sought to the recording requirements for the following parameters 14 CFR 121 Appendix M and 14 CFR 125 Appendix E:

For A330/A340 series aircraft:

Parameter 9, Thrust/Power of each engine primary flight crew reference: EPR Actual (A330 with PW Engines), is required to have a resolution of $3.4E-3$ by the present FAR and is implemented as $3.9E-3$;

Parameter 9, Thrust/Power of each engine primary flight crew reference: EPR Actual (A330 with RR engines), is required to have a resolution of $2.7E-3$ by the present FAR and is implemented as $3.9E-3$;

Parameter 37, Drift Angle, is required to have a resolution of 0.1 by the present FAR, and is implemented as 0.35;

Parameter 42, Throttle/power lever position, is required to have a resolution of 1.1 deg, and is implemented as 1.8 deg for throttle lever angle (TLA); for reverse throttle lever angle (RLA), the resolution is nonlinear and ranges from 6 degrees to 2.8 degrees over the active reverse thrust range of 51.3 deg to 98.8 deg RLA.

For A319/320/321 series aircraft:

Parameter 42, Throttle/power lever position, is required to have a resolution of 1.3 deg, but is implemented as 2.8 deg;

Parameter 57, Thrust Command (EPR for IAE Engines only) is required to have a resolution of 0.024, but is implemented at 0.031.

Specific regulatory language that would effect these changes is suggested, and provided as an Appendix to this petition.

3.0 Public Interest [per FAR 11.25(b)(5)]

As FAA itself noted in the course of the original rulemaking incorporating these new requirements, it was not intended that the new requirements would result in required retrofit or modification of existing equipment. The changes requested are minor and technical in nature. None of the changes would significantly affect the ability of accident investigators to perform their tasks. The changes will not adversely affect the safety of the aircraft, hinder the investigation of accidents or incidents, nor compromise the intent of the DFDR rules. Their sole purpose is to account for the differences in Airbus DFDR equipment when compared to the precise regulatory requirements.

A large cost to US operators would obviously be involved in redesigning and retrofitting new equipment to effect literal compliance with the recording resolution requirements of the present regulations. This cost would not be balanced by any gain in safety or investigative capability deriving from such changes. It is, therefore, in the public interest to make the requested regulatory modifications so as to obviate an unnecessary and unproductive expenditure by US airlines.

Appendix

Suggested regulatory language to effect requested changes

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 121, 125

[Docket No. XXXX; Amendment Nos. 121-XXXX & 125-XXXX]

RIN XXXX

Revisions to Digital Flight Data Recorder Requirements for Airbus Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: This action amends the flight data recorder regulations by adding language to allow certain Airbus airplanes to record certain data parameters using resolution requirements that differ slightly from the current regulation. This amendment is necessary because the Airbus airplanes are unable to record certain flight parameters under the existing criteria without undergoing unintended and expensive retrofit.

DATES: This final rule is effective XXXX.

Comments must be submitted on or before XXXX.

ADDRESSES: Comments on this final rule should be mailed or delivered, in duplicate to: U.S. Department of Transportation Dockets, Docket No. FAA-XXXX, 400 Seventh Street, SW, Room Plaza 401, Washington, DC 20590.

Comments may also be sent electronically to the following internet address: 9-NPRM-CMTS@faa.gov. Comments may be filed and/or examined in Room Plaza 401 between 10 a.m. and 5 p.m. weekdays except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Gary E. Davis, Air Carrier Operations Branch (AFS-201), Flight Standards Service, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, telephone (202) 267-8166.

SUPPLEMENTARY INFORMATION

Comments Invited

This final rule is being adopted without prior notice and prior public comment. The Regulatory Policies and Procedures of the Department of Transportation (DOT) (44 FR 1134; February 26, 1979), however, provide that, to the maximum extent possible, operating administrations for the DOT should provide an opportunity for public comment on regulations issued without prior notice. Accordingly, interested persons are invited to participate in this rulemaking by submitting such written data, views, or arguments, as they may desire. Comments relating to environmental, energy, federalism, or international trade impacts that might result from this amendment also are invited. Comments must include the regulatory docket or amendment number and must be submitted in duplicate to the address above. All comments received, as well as a report summarizing each substantive public contact with FAA personnel on this rulemaking, will be filed in the public docket. The docket is available for public inspection before and after the comment closing date.

The FAA will consider all comments received on or before the closing date for comments. Late filed comments will be considered to the extent practicable. This final rule may be amended in light of the comments received.

Commenters who want the FAA to acknowledge receipt of their comments submitted in response to this final rule must include a preaddressed, stamped postcard with those comments on which the following statement is made:

"Comments to Docket No. FAA-XXXX. The postcard will be date-stamped by the FAA and mailed to the commenter.

Availability of Final Rule

An electronic copy of this document may be downloaded using a modem and suitable communications software from the FAA regulations section of the Fedworld electronic bulletin board service (telephone: (703) 321-3339), or the Government Printing Office's (GPO) electronic bulletin board service (telephone: (202) 512-1661).

Internet users may reach the FAA's web page at <http://www.faa.gov/avr/arm/nprm/nprm.htm>, or the Government Printing Office's webpage at <http://www.access.gpo.gov/nara> for access to recently published rulemaking documents.

Any person may obtain a copy of this final rule by submitting a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue, SW, Washington, DC 20591, or by calling (202) 267-9680. Communications must identify the notice number or docket number of this rule.

Persons interested in being placed on the mailing list for future Notices of Proposed Rulemaking or Final Rules should request from the above office a copy of Advisory Circular No. 11-2A, Notice of Proposed Rulemaking Distribution System, that describes the application procedure.

Small Entity Inquiries

If you are a small entity and have a question, contact your local FAA official. If you do not know how to contact your local FAA official, you may contact Charlene Brown, Program Analyst Staff, Office of Rulemaking, ARM-27, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, 1-888-551-1594. Internet users can find additional information on SBREFA in the "Quick Jump" section of the FAA's web page at <http://www.faa.gov> and may send electronic inquiries to the following internet address: 9-AWA-SBREFA@faa.gov.

BACKGROUND

Statement of the Problem

After the amendments to the DFDR requirements became effective on August 18, 1997 (62 FR 38362), the FAA began receiving telephone inquiries, requests for meetings, and petitions for exemption from Airbus Industrie (Airbus) concerning the economic impact of the amendments on certain Airbus airplanes. Airbus claimed that in order to comply with the new DFDR recording requirements of 14 CFR Appendix M, its A300 B2/B4 series, A318/A319/A320/A321 series, and its A330/A340 series airplanes would have to undergo major equipment retrofits. During the rulemaking, the FAA had stated that the rule was being tailored to avoid major equipment retrofits.

The digital flight data recorders (DFDRs) in the affected Airbus airplanes already record the required parameters, but some of the

resolution and sampling intervals for certain parameters differ slightly from those required by Appendix M. Airbus noted this difference in its comment to the NPRM, but the comment was not fully addressed in the preamble to the final rule, issued in August 1997.

History of amendments to DFDR requirements

On February 22, 1995, the NTSB recommended that the FAA require upgrades of the flight data recorders installed on certain airplanes to record certain additional parameters not required by the current regulations. Two of the recommendations made by the NTSB affected the subject Airbus airplanes:

Recommendation No. A-95-26. Amend, by December 31, 1995, 14 CFR §§121.343, 125.225, and 135.152 to require that Boeing 727 airplanes, Lockheed L-1011 airplanes, and all transport category airplanes operated under 14 CFR Parts 121, 125, or 135 whose type certificates apply to airplanes still in production, be equipped to record on a flight data recorder system, as a minimum, the parameters listed in "Proposed Minimum FDR Parameter Requirements for Airplanes in Service" plus any other parameters required by current regulations applicable to each individual airplane. Specify that the airplanes be so equipped by January 1, 1998, or by the later date when they meet Stage 3 noise requirements but, regardless of Stage 3 compliance status, no later than December 31, 1999. (Classified as Class II, Priority Action)

Recommendation No. A-95-27. Amend, by December 31, 1995, 14 CFR 121.343, 125.225, and 135.152 to require that all airplanes operated under 14 CFR Parts 121, 125, or 135, having 10 or more seats, and for which an original airworthiness certificate is received after December 31, 1996, record the parameters listed in "Proposed FDR Enhancements for Newly Manufactured Airplanes" on a flight data recorder having at

least a 25-hour recording capacity. (Classified as Class II, Priority Action)

Notice of Proposed Rulemaking

On July 16, 1996, the FAA published a notice for proposed rulemaking (NPRM) (Notice No. 96-7, 61 FR 37143) addressing revisions to DFDR rules. The proposals were based on the NTSB recommendations, information obtained through the public hearing, and the efforts of the ARAC working group.

As part of its comment to the proposed rule, Airbus stated that there were current recorder systems that record the required parameters at sampling rates or resolutions that differ from the proposed Appendix M. Airbus suggested that the rates and resolutions be changed since meeting them would impose significant retrofit costs on operators of Airbus airplanes. It was not until Airbus petitioned for exemption from the Appendix M requirements that the FAA's attention was focused on the insufficient response to the Airbus comment, the significant number of Airbus airplanes involved, and the minor variations that would be required from Appendix M requirements. As stated previously, it was never the intention of the FAA to require operators of any airplanes to incur significant equipment retrofit costs in order to comply with the requirements for DFDR upgrades.

The FAA believes that had it fully understood the overall impact the final rule would place on operators of Airbus airplanes, it would have made specific provisions to reduce or eliminate that impact in the final rule.

Petitions for Exemption and Rulemaking

On April 9, 1998, Airbus petitioned the FAA, on behalf of operators of Airbus aircraft, for permanent exemptions

from part 121, Appendix M, and Part 125, Appendix E. Airbus requested that the A318/A319/320/321 series aircraft and A330/A340 series aircraft be exempted from the recording resolution requirements and be allowed to record alternatives for several parameters. On August 24, 1999, FAA published a final rule (64 FR 46117) addressing those requests, which have been incorporated into the Appendices to Part 121 and Part 125 as a series of 13 footnotes.

Since that time, Airbus has filed a petition for rulemaking that requests correction of an additional parameter (parameter 9 Thrust/power of each engine—primary flight crew reference) that it had inadvertently left off the petition for exemption, and also requesting minor changes to the recording requirements for parameter 37 (drift angle), parameter 42 (Power lever angle), and parameter 57 (Thrust command, for IAE engines only). Airbus in that petition stated that current Airbus A318, A319, 320, 321, 330, and 340 series airplanes are equipped with a digital flight data recording system (DFDRS) that records all mandatory parameters, numbers 1 through 88. Airbus further stated that, in order to complete the corrections of errors in the resolution and sampling requirements of Appendix M to Part 121 and Appendix E to Part 125, the specific additional changes required are as follows:

For A330/A340 series aircraft:

Parameter 9, Thrust/Power of each engine—primary flight crew reference: EPR Actual (A330 with PW Engines), is required to have a resolution of $3.4\text{E-}3$ by the present FAR and is implemented as $3.91\text{E-}3$;

Parameter 9, Thrust/Power of each engine—primary flight crew reference: EPR Actual (A330 with RR engines), is required to have a resolution of $2.7\text{E-}3$ by the present FAR and is implemented as $3.91\text{E-}3$;

Parameter 37, Drift Angle, is required to have a resolution of 0.1 by the present FAR, and is implemented as 0.352;

Parameter 42, Throttle/power lever position (A330/340 Series), is required to have a resolution of 1.1 deg, and is implemented as 1.809 deg for throttle lever angle (TLA); for reverse throttle lever angle (RLA), the resolution is nonlinear and ranges from 6 degrees to 2.8 degrees over the active reverse thrust range of 51.3 deg to 98.8 deg RLA

For A319/320/321 series aircraft:

Parameter 42, Throttle/power lever position, is required to have a resolution of 1.3, but is implemented at 2.8125;

Parameter 57, Thrust command (EPR, for IAE Engines only) is required to have a resolution of 0.024, but is implemented at 0.0312.

The FAA has previously determined that it would not be appropriate to grant an exemption to Airbus on behalf of the operators of its aircraft. Even if exemptions were granted to individual operators, they would have to be permanent. The FAA has determined that, under such circumstances, a change to the rule language of Appendix M is the only appropriate means to account for the differences in Airbus DFDR equipment. Accordingly, the FAA is amending part 121 Appendix M, and Part 125 Appendix E to indicate that certain Airbus airplanes may record the indicated parameters using the rates and resolutions listed. The FAA consulted informally with the NTSB concerning this variation, and the NTSB indicated that the proposed change would not significantly affect its ability to investigate accident or incidents.

The FAA has determined that these changes will not adversely affect the safety of the aircraft, hinder the investigation of accidents or incidents by the NTSB, nor compromise the intent of the DFDR rules. This amendment

will revise the resolution recording requirements of parameters 9, 37, 42 and 57. The FAA has determined that these changes can be accommodated by footnotes in Appendix M to part 121 and Appendix E to part 125.

Good Cause for Immediate Adoption

Sections 553(b)(3)(B) and 553(d)(3) of the Administrative Procedure Act (APA) (5 U.S.C. Sections 553(b)(3)(B) and 553(d)(3)) authorize agencies to dispense with certain notice procedures for rules when they find "good cause" to do so. Under section 553(b)(3)(B), the requirements of notice and opportunity for comment do not apply when the agency for good cause finds that those procedures are "impracticable, unnecessary, or contrary to the public interest." Section 553(d)(3) allows an agency, upon finding good cause, to make a rule effective immediately, thereby avoiding the 30-day delayed effective date requirement in section 553.

The FAA finds that notice and public comment to this final rule are impracticable, unnecessary, and contrary to the public interest. This final rule amends the flight data recorder regulations by adding language to the appendices of parts 121 and 125 to allow certain Airbus airplanes to record certain data parameters using resolution and sampling requirements that differ slightly from the current regulation. As a result, the FAA has determined that notice and public comment are unnecessary because the change effectuates the original intent of the regulation, is not controversial, and is unlikely to result in adverse comments since it affects only operations of Airbus airplanes.

Regulatory Evaluation Summary

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal

agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic effect of regulatory changes on small entities. Third, OMB directs agencies to assess the effects of regulatory changes on international trade.

The FAA has determined that there are no costs associated with this final rule; the rule imposes no costs upon operators of Airbus airplanes. Instead, this rule change relieves operators of Airbus airplanes from a regulatory burden that was inadvertently imposed on them in the adoption of the 1997 regulations, and would have an impact beginning August 18, 1999. This change effectuates the original intent of the 1997 regulations.

The FAA has determined this rule is not "a significant regulatory action" under section 3(f) of Executive Order 12866 and, therefore, is not subject to review by the Office of Management and Budget. The rule is not considered significant under the regulatory policies and procedures of the Department of Transportation (44 FR 11034, February 26, 1979). The rule will not have a significant impact on a substantial number of small entities and will not constitute a barrier to international trade.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the RFA requires agencies to

solicit and consider flexible regulatory proposals and to explain the rationale for their actions. The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis (RFA) as described in the RFA. However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 act provides that the head of the agency may so certify and an RFA is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The FAA has determined that there are no costs associated with this final rule. Accordingly, pursuant to the Regulatory Flexibility Act, 5 U.S.C. 605(b), the Federal Aviation Administration certifies that this proposed rule will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Analysis

The revised rule will have little or no impact on trade for U.S. firms doing business in foreign countries and foreign firms doing business in the United States.

Federalism Implications

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national

Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the FAA has determined that there are no requirements for information collection associated with this final rule.

Unfunded Mandates Reform Act Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, requires each Federal agency, to the extent permitted by law, to prepare a written assessment of the effects of any Federal mandate in a proposed or final agency rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more (adjusted annually for inflation) in any one year. Section 204(a) of the Act, 2 U.S.C. 1534(a), requires the Federal agency to develop an effective process to permit timely input by elected officers (or their designees) of State, local, and tribal governments on a proposed "significant intergovernmental mandate." A

"significant intergovernmental mandate" under the Act is any provision in a Federal agency regulation that would impose an enforceable duty upon State, local, and tribal governments, in the aggregate, of \$100 million (adjusted annually for inflation) in any one year. Section 203 of the Act, 2 U.S.C. 1533, which supplements section 204(a), provides that before establishing any regulatory requirements that might significantly or uniquely affect small governments, the agency shall have developed a plan that, among other things, provides for notice to potentially affected small governments, if any, and for a meaningful and timely opportunity to provide input in the development of regulatory proposals.

This rule does not contain a Federal intergovernmental or private sector mandate that exceeds \$100 million a year.

Environmental Analysis

FAA Order 1050.1D defines FAA actions that may be categorically excluded from preparation of a National Environmental Policy Act (NEPA) environmental assessment or environmental impact statement. In accordance with FAA Order 1050.1D, Appendix 4, paragraph 4(j), this rulemaking action qualifies for a categorical exclusion.

Energy Impact

The energy impact of the rule has been assessed in accordance with the Energy Policy and Conservation Act (EPCA) and Public Law 94-163, as amended (43 U.S.C. 6362) and FAA Order 1053.1. It has been determined that the rule is not a major regulatory action under the provisions of the EPCA.

List of Subjects

14 CFR Part 121

Air carriers, Aviation safety, Reporting and recordkeeping requirements, Transportation

14 CFR Part 125

Aircraft, Airmen, Aviation safety, Reporting and recordkeeping requirements

The Amendment

Accordingly, the Federal Aviation Administration amends parts 121 and 125 of Chapter 1 of Title 14 of the Code of Federal Regulations as follows:

PART 121--OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS

1. The authority citation for part 121 continues to read as follows:

Authority: 49 USC. 106(g), 40113, 40119, 44101, 44701-44702, 44705, 44709-44711, 44713, 44716-44717, 44722, 44901, 44903-44904, 44912, 46105.

APPENDIX M TO PART 121 -- AIRPLANE FLIGHT RECORDER SPECIFICATIONS

The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

Parameters	Range	Accuracy (sensor input)	Seconds per sampling interval	Resolution	Remarks
9. Thrust/power on each engine—primary flight crew reference ¹⁴	* * *	* * *	* * *	* * *	* * *
* * *	* * *	* * *	* * *	* * *	* * *
37. Drift Angle ¹⁵	* * *	* * *	* * *	* * *	* * *
* * *	* * *	* * *	* * *	* * *	* * *
42. Throttle/Power Lever Position ¹⁶	* * *	* * *	* * *	* * *	* * *
* * *	* * *	* * *	* * *	* * *	* * *
57. Thrust Command ¹⁷	* * *	* * *	* * *	* * *	* * *

¹⁴ For A330 Airplanes with PW or RR Engines, resolution = 0.00391

¹⁵ For A330/A340 series airplanes, resolution = 0.352 deg.

¹⁶ For A318/A319/A320/A321 series airplanes, resolution = 2.8125 deg. For A330/A340 series airplanes, resolution is 1.809 deg for throttle lever angle (TLA); for reverse thrust, the reverse throttle lever angle (RLA) is nonlinear and ranges from 6 degrees to 2.8 degrees over the active reverse thrust range of 51.3 degrees to 98.8 degrees RLA.

¹⁷ For A318/A319/A320/A321 series airplanes, resolution = 0.0312 degrees

Part 125--CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE

3. The authority citation for Part 125 continues to read as follows: Authority: 49 U.S.C. 106(g), 40113, 44701-44702, 44705, 44710-44711, 44713, 44716-44717, 4472

4. In Appendix E, the title of the Appendix, and item numbers 9, 37, 42, and 57 are revised to read as follows:

APPENDIX E TO PART 125 -- AIRPLANE FLIGHT RECORDER SPECIFICATIONS

The recorded values must meet the designated range, resolution, and accuracy requirements during dynamic and static conditions. All data recorded must be correlated in time to within one second.

Parameters	Range	Accuracy (sensor input)	Seconds per sampling interval	Resolution	Remarks
9. Thrust/power on each engine-primary flight crew reference ¹⁴	* * *	* * *	* * *	* * *	* * *
* * *	* * *	* * *	* * *	* * *	* * *
37. Drift Angle ¹⁵	* * *	* * *	* * *	* * *	* * *
* * *	* * *	* * *	* * *	* * *	* * *
42. Throttle/Power Lever Position ¹⁶	* * *	* * *	* * *	* * *	* * *
* * *	* * *	* * *	* * *	* * *	* * *
57. Thrust Command ¹⁷	* * *	* * *	* * *	* * *	* * *

¹⁴ For A330 Airplanes with PW or RR Engines, resolution = 0.00391

¹⁵ For A330/A340 series airplanes, resolution = 0.352 deg.

¹⁶ For A318/A319/A320/A321 series airplanes, resolution = 2.8125 deg. For A330/A340 series airplanes, resolution is 1.809 deg for throttle lever angle (TLA); for reverse thrust, reverse throttle lever angle (RLA) resolution is nonlinear and ranges from 6 degrees to 2.8 degrees over the active reverse thrust range, which is 51.3 deg to 98.8 deg RLA.

¹⁷ For A318/A319/A320/A321 series airplanes, resolution = 0.0312 degrees

Issued in Washington, DC, on August 17, 1999.

Jane F. Garvey
Administrator

RIN # XXXX Revisions to Digital Flight Data Recorder Requirements for
Airbus Airplanes